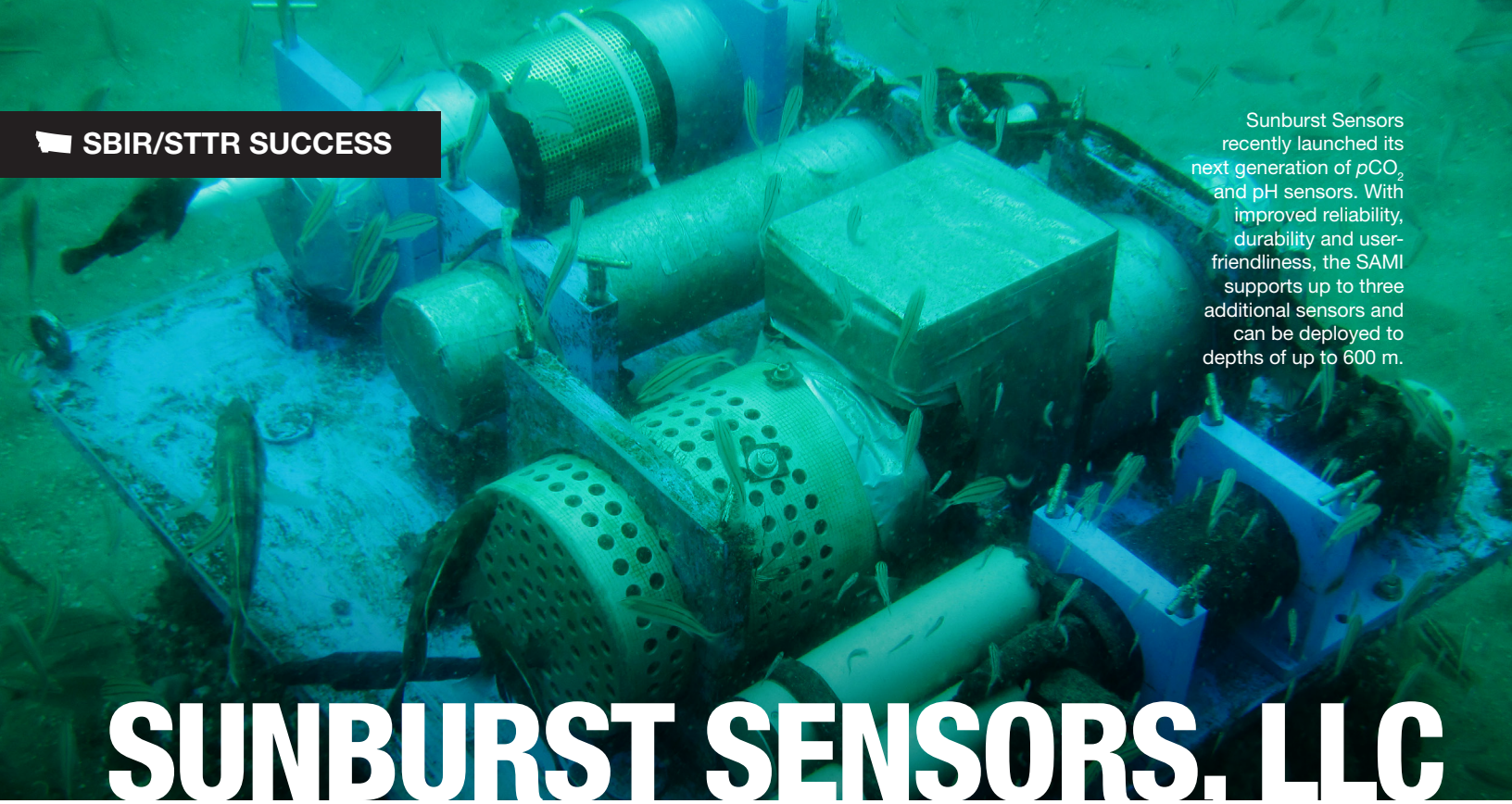

Sunburst Sensors recently launched its next generation of pCO_2 and pH sensors. With improved reliability, durability and user-friendliness, the SAMI supports up to three additional sensors and can be deployed to depths of up to 600 m.

SUNBURST SENSORS, LLC

In an effort to study the impact of carbon dioxide on the world's oceans, scientists have long been trying to develop an accurate means of assessment. Through the expensive and highly labor intensive process of sending out large ships of personnel and sensors, researchers have been able to gain better understanding of the effects that human produced CO_2 has on ocean water. But a better method was needed.

PHASE III SUCCESS
Over $2.5 million from recent contracts with NSF and NOAA, along with domestic and international sales; additional $1.5 million in XPRIZE awards

AGENCIES
DOC (NOAA), NSF

SNAPSHOT
Sunburst Sensors, founded by a professor at The University of Montana, provides chemical sensors for marine and freshwater applications; sells to over 20 countries around the world.

SUNBURST SENSORS, LLC
1226 West Broadway
Missoula, MT 59802-3915

www.sunburstsensors.com
(406) 532-3246

Meanwhile, Professor Michael DeGrandpre was immersed in his own research at the University of Montana where he taught aquatic chemistry and environmental classes. Somewhat serendipitously, his studies aligned with the same methods the National Oceanographic Partnership Program (NOPP) was seeking, and he began to envision much larger, broader applications. Fifteen years later, Sunburst Sensors is the preeminent manufacturer of chemical sensors for aquatic applications, and demand for its product suite is booming far beyond its doors in Missoula, Montana.

"We were in business a few years when a request for proposals from NOPP came out seeking chemical and biological instrumentation," explains DeGrandpre. "They wanted something that could be commercialized, so we applied and won our first grant worth $900,000 and that was really huge for us."

DeGrandpre used that money to bring on James Beck, an expert in the biomedical/electronics field who became the co-owner of the company. The two-man team then began work on their CO_2 instrument that would pave the way for a bright future of commercialized products. The SAMI (Submersible Autonomous Moored Instrument) CO_2 measures the partial pressure of carbon dioxide (pCO_2) in both oceans and freshwater, using a highly precise and stable colorimetric reagent method. Able to be deployed for more than a year, and taking measurements every single hour, the SAMI-CO_2 provides researchers never-before accuracy over a long period without the use of ships.

As products sales for SAMI took off, DeGrandpre was simultaneously working on another instrument that would measure the pH of bodies of water. The resulting product, SAMI-pH, uses a highly accurate colorimetric reagent method and provides researchers with valuable time series data at depths up to 600 meters.

Earlier this summer, Sunburst Sensors won first place in both purses of the $2 million Wendy Schmidt Ocean Health XPRIZE, bringing home $1.5 million. The awards took place on Monday, July 20 2015 in New York City. Sunburst Sensors entered two devices, both variants on its existing SAMI-pH technology. The SAMI entered into the accuracy purse was built to withstand the 3000-meter (1.9 mile) depth requirement in deployments at the Ocean Station ALOHA. The iSAMI entered into the accuracy purse is a prototype of a forth-coming product meant to be much less expensive for use in shallow deployments.

So how much does an autonomous sensor cast out to sea cost? Although the price tag of $18K per sensor may seem steep, the sensors provide immense cost savings to the baseline technology of sending crews out to test the waters. Missions such as these can cost upwards of $20K per day, making Sunburst Sensors' options the most viable. That is why the National Oceanic and Atmospheric Administration (NOAA) has been purchasing sensors from Sunburst, along with a slew of European nations. Recently, the National Science Foundation (NSF) and its Ocean Observing Initiative (OOI) partnered with Sunburst Sensors for its pH instrumentation. By utilizing the SBIR program through NOAA, the company has evolved and matured its existing product suite, which includes various kinds of sensors that cover a wide range of applications.

"In a small business, with day to day operations, and other objectives, you don't necessarily have the money to pursue these objectives that are obviously very important," adds DeGrandpre. "But with SBIR, you now have this opportunity. For instance, in a recent Phase II project with NOAA, we developed an inexpensive, disposable sensor that sits on a drifter, which is a huge advantage since you don't have to deploy and then recover. In this way, you can collect a lot more data and that information is then transmitted back to us via satellite."

DeGrandpre also attributes setting up shop in Montana as a key factor of his company's success. Since the state is very focused on commercialization, Sunburst Sensors has received state grants from the Montana Board of Research and Commercialization Technology (MBRCT). DeGrandpre continues to teach and give back to the University of Montana, where his company began in a high tech incubator – MONTEC. Today, the company employs 9 individuals and is continually focused on providing the worldwide research community with the most effective and cost-efficient means available to measure and assess the aquatic chemistry of bodies of water all over the globe.

The SAMI™ – Submersible Autonomous Moored Instrument – measures and logs pH or pCO_2 in marine and freshwater environments over long periods with ultra-low power and reagent consumption, providing valuable time-series data to researchers around the world.